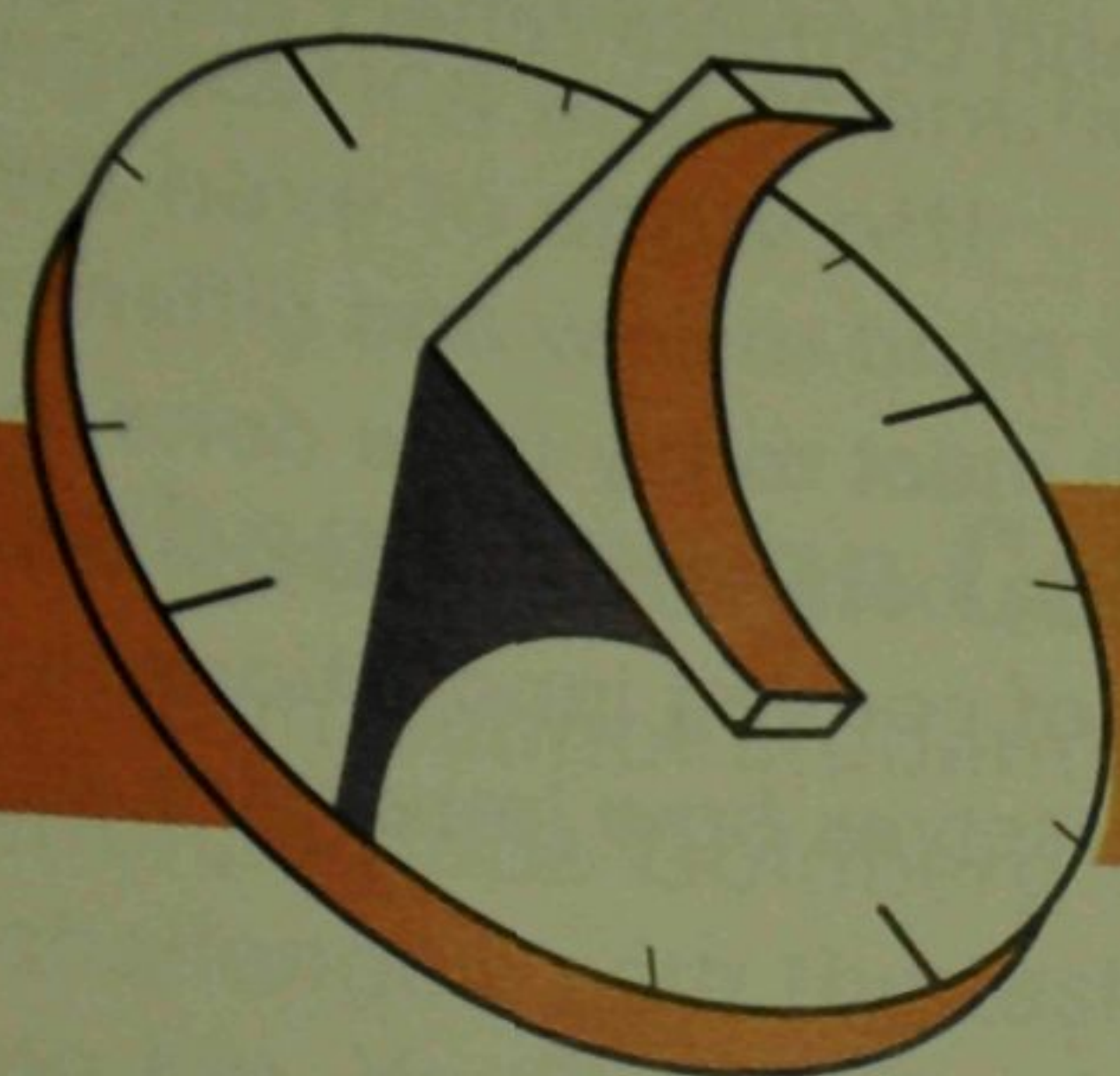


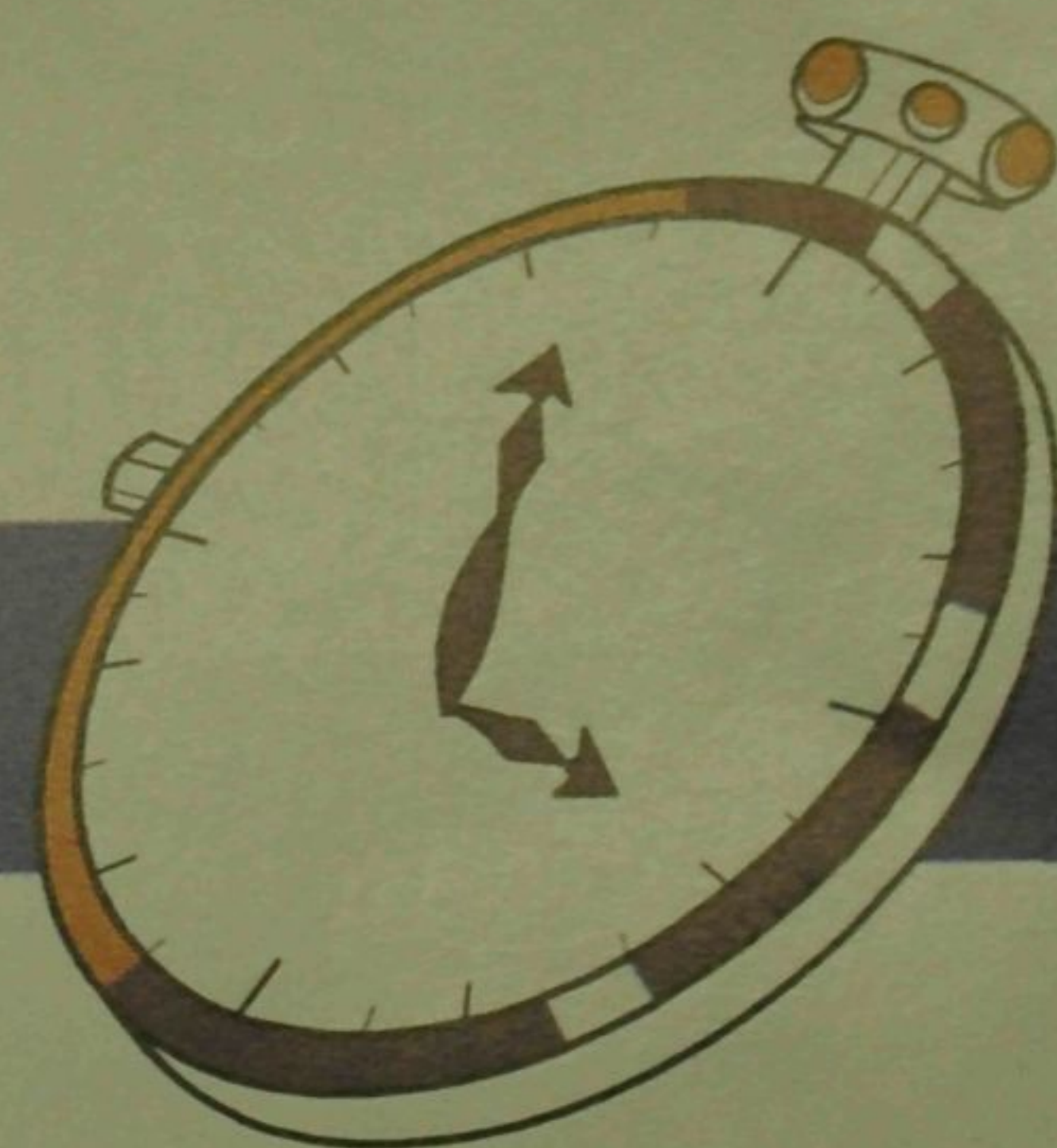
Engineering Open House



Create
University of Illinois

Innovate

March 14-15 2003



Fascinate
eoh.cen.uiuc.edu

visitors guide

ENGINEERING OPEN HOUSE 2003

CREATE, INNOVATE, FASCINATE



January 3, 2003

Dear Visitors:

Welcome to the 2003 Engineering Open House. Building on more than 80 years of tradition, this is one of the nation's largest and most innovative science fairs. It is organized and managed entirely by science and engineering students in the College of Engineering. The exhibits and contests reflect their enthusiasm for science and engineering, and passion for creativity.

The theme, "Create, Fascinate, Innovate," is an invitation to open your mind to new and different ideas and to think more creatively—just as the engineering students you will meet today have done to create this experience for you. You will learn about the science and engineering behind everyday products, see how engineering is used to solve problems, and even catch a glimpse of coming innovations in technology. We invite you to ask questions, get involved, and find out for yourselves how important engineering is to society.

Among the more than 200 colleges of engineering in the U.S., our engineering school is ranked No. 3 in the country, trailing only MIT and Stanford. The University of Illinois is one of the world's gems of engineering research and education. Feel free to ask us about our programs or learn more at www.engr.uiuc.edu.

We thank you for joining us at Engineering Open House.

Sincerely,

David E. Daniel
David E. Daniel, Dean

Open House Central Committee

Engineering Open House Director
Exhibits Director
Facilities Directors
Directors of Corporate Relations
Director of Visitor Information
Director of Electronic Information
Publicity Director
Jerry Sanders Design Contest Director
High School Design Contest Director
Grade School Design Contest Director
On-Site School Design Contest
Director of Judging and Awards
Treasurer/Secretary
Entertainment Director
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Lily Yang
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Kristi Ryzner
Brian Heisler
Cindy Chang

Special Thanks

Kay Kappes, Hedi Pugh & the staff of 206 Engineering Hall
Dean David Daniel & Dean Roscoe Pershing from COE
Dean Chuck Olson from ACES
Greg Larson & Randy Ervin from COE
Rhonda Kissling and the staff of the office for Project Planning
Facility Management
Tracy Osby and Charles Hassel from Operation and Maintenance Division
Capt. Kallmayer & Lt. David Nelson from Campus Police Dept.
Donna Nichols from Mechanical and Industrial Engineering Dept.
CITES
W.J. "Jerry" Sanders and Advanced Micro Devices
Donald Beasley and Mark Briggs from the Division of Public Safety
J. Brooks Moore from the Office of Registered Organization
Department of Electrical and Computer Engineering
Scott McDonald & the ECE Machine Shop
Dup-It Copy Shop
Shadow Ranch Design and Productions
Champaign Computer Company
Campus Sportswear
Special Events Committee
Volunteers – without you EOH would not be a reality!

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Urbana, IL 61801
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[HTTP://EOH.CEN.UIUC.EDU](http://EOH.CEN.UIUC.EDU)

HIGHLIGHTS

Grade School Competition

The Grade School EOH Program offers many different types of challenging and fun activities for grade school students. This year's Grade School Design Contest, open to 7th and 8th graders, will be to design and build a bridge out of spaghetti. The bridge that can hold the most weight will be declared winner. The On-site Grade School Design Challenge will remain a secret until participants compete and will test the engineering mind of all grade levels. And finally, the Grade School Village will offer several hands on exhibits used to demonstrate basic engineering and scientific principles. Come by and see what these young engineers have to show off!

High School Design Contest

Teams of High School students will be doing things the hard way in this year's competition, a Rube Goldberg Machine Contest. Their Rube Goldberg machines will be challenged with the task of crushing an aluminum can and placing it in a recycling bin. You'll see physics and engineering principles hard at work in a very exciting way. Stop by the Illini Union on Friday to see their creations and to vote for your favorite machine!

Illini Engineering Challenge

The 6th annual Illini Engineering Challenge gives you, the visitors of EOH, a chance to show off your own engineering skills! The contest will take place in Kenney Gym on Saturday between 9 am and 3pm. This year, participants will be required to build the sturdiest Paper Bridge using only the materials provided. Everyone will win a prize for participation, and the top entries will also receive additional prizes. So stop by Kenney Gym on Saturday and see you there!

AMD W. J. "Jerry" Sanders Creative Design Competition

The AMD W.J. "Jerry" Sanders Creative Design Competition is an annual robotics competition pitting some of the best engineering student in the country in a test of engineering and ingenuity. Robots earn points for capturing helium filled balloons and bringing them back to their home bases. Preliminary rounds are 10 minutes per match with robots competing to enter the elimination rounds on Saturday. Join us for one of the largest and most exciting events at EOH. This highlight of Engineering Open house is sponsored by Advanced Micro Devices and encourages creativity and excellence in engineering.

Traffic and Safety

Engineering Open House takes great pains to ensure the safety of our visitors. We ask that you not enter those rooms and buildings not marked for EOH use as indicated in the Visitor's Guide. Additionally, please follow standard safety precautions with special consideration for campus construction sites.

Food and Entertainment

EOH proudly presents Area 51, the center stage for entertainment, conveniently located in the big tent between Engineering Hall and Everitt Lab, across the street from the Illini Union. Area 51 is the part of EOH that showcases engineers doing non-engineering things, that include singing, dancing, juggling, you name it! Area 51 is also the place where you can grab a bite to eat and relax for a couple of minutes as you tour the exhibits. It provides an entertaining balance to the technological marvels that are on display across the U of I Engineering campus during EOH.

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Campus Map back cover

Location and Time

March 14 and 15, 2003
Kenny Gym Annex
University of Illinois
at Urbana-Champaign

Schedule

Competition will be from around 8:00 AM to 4:00pm both days with final rounds being on Saturday.

There will be rounds running during all the times with bonus rounds and even crowd participation events spaced throughout the day.

W.J. "Jerry" Sanders Creative Design Competition Committee

Christos Bais
Field Chair

Kate Stanton
Volunteers Chair

Grace Chi
Media Publicity Chair

Thomas Willingham
Publicity Chair

Bharath Krishnan
Correspondance Chair

Lian Zhao
Webmaster

Shang Koo
Student Advisor

Daniel Mast
Faculty Advisor

16th Annual AMD "Jerry" Sanders Creative Design Competition

The AMD Jerry Sanders Creative Design Contest is going into its 16th year of excellence. Students from Penn State to Washington University—St Louis come to compete in this two-day contest of robotic might. This year's contest showcases a new twist on last year's object collecting competition. Robots will score points by bringing objects from different locations around the arena back to their base and protecting them from other robots that would see to it to collect the objects for themselves. This year's twist is that the objects will be floating helium filled balloons attached to the course. While maneuvering around a massive, two level, 36' x 36' course, robots will have to fight off other robots while trying to score the most points in each 10 minute round.



Scoring

Red balloons
worth 7 if put in hood

Blue balloons
worth 4 if put in hood

Green Balloons
worth 3 if put in hood

1 point if not put in hood

"Jerry" Sanders III graduated from the University of Illinois at Urbana-Champaign in 1958 with a Bachelors of Science in Electrical Engineering. Since then, he's gone on to start one of the most successful companies of our times.

W. J. "Jerry" Sanders III co-founded Advanced Micro Devices (AMD) in 1969. Under his leadership, AMD grew from being a "second-sourcer" of other companies' products to its current position as the fourth largest semiconductor manufacturer in the United States.

Sanders also co-founded several prominent industry groups including the Semiconductor Industry Association, the Santa Clara Manufacturing Group, the Semiconductor Research Corporation and the Microelectronics and Computer Technology Corporation.

The Wall Street Transcript named Sanders the Best Chief Executive Officer in the semiconductor industry for the years 1983, 1984, and 1985, and runner-up in 1991. Mr. Sanders received the Robert N. Noyce Award from the Semiconductor Industry Association (SIA) in 1998. In 2001 he received the Medal of Achievement from the AeA, the nation's largest high tech industry association.

Sanders' continued support for the University of Illinois and in particular this design contest is a testament to his support of education competition, both of which he thinks breeds success, creativity, and excellence.



W.J. Sanders III
*Chairman of the Board and
Chief Executive Officer
Advanced Micro Devices, Inc.*

ENGINEERING OPEN HOUSE TOURS

- Some tours will see the Concrete Crushing exhibit by Society for Experimental Mechanics where you'll watch them demolish concrete cylinders in their three million pound testing machine!
- Everyone loves Liquid Nitrogen!! Another featured exhibit lets you see the effects of super-cool temperatures on everyday objects and see our liquid nitrogen propulsion demonstration.
- Ever seen a soda can being crushed by the most inventive machines in more than twenty steps? You'll love the High School Rube Goldberg contest! And the best part, you get to be the judge and vote for your favorite!

Tours begin at the start of every hour at Area 51.

We'll take you around the Engineering Quad to the best exhibits and contests. So be sure to stop by so you don't miss any part of EOH!!

PROJECT LISTING BY BUILDING

ACRONYMS

SOCIETIES

AAG	Applied Aerodynamics Group
ACM	Association for Computing Machinery
ACS	Alpha Chi Sigma
AES	Audio Engineering Society
AIAA	American Institute of Aeronautics and Astronautics
AICHe	American Institute of Chemical Engineers
ANS	American Nuclear Society
AOE	Alpha Omega Epsilon
AS	Astronomical Society
ASAE	American Society of Agricultural Engineering
ASCE	American Society of Civil Engineers
ASME	American Society of Mechanical Engineers
EFC	Engineering Freshman Committee
EMBS	Engineering in Medicine and Biology Society
EOS	Engineering Outreach Society
IEEE	Institute of Electrical and Electronics Engineers
IIE	Institute of Industrial Engineers
ISDS	Illini Space Development Society
ISGE	Illinois Society of General Engineers
ITE	Institute of Transportation Engineers
NOBCChE	National Organization of Black Chemists and Chemical Engineers
PLO	Programmers Liberation Organization
PTS	Pi Tau Sigma
SAE	Society of Automotive Engineers
SBME	Society for Business Management in Engineering
SEM	Society for Experimental Mechanics
SME	Society of Manufacturing Engineers
SWE	Society of Women Engineers
Techfront	Technological Frontiers Society
TFS	Technological Frontiers Society
UIMS	University of Illinois Materials Society
UMO	Undergraduate Materials Organization
WCS	Women in Computer Science

PROJECT	SOCIETY	ROOM	GRADE SCHOOL	HIGH SCHOOL	ADULT	RUNS CONT.
Agricultural Engineering Sciences Building						
Invisible Illumination Sees Starch!	AgE dept.	1st Floor	X	X	X	X
Illini Pullers	ASAE	Hallway	X	X	X	X
The Power and Fun of Aerodynamics	ASAE	Hallway	X	X	X	X
Kill Weed, Not Time	SAE	1st Floor	X	X	X	X
Off-road Illini: SAE Mini Baja	SAE Mini Baja	Entrance		X	X	X
UIUC SAE Mini Baja	SAE Mini Baja	Entrance				X
Coordinated Science Lab						
Wireless Networking	CSL	B13	X	X		
Digital Computer Lab						
FootBot!	ACM	Atrium	X	X	X	X
The QuuxBox	ACM	Atrium	X	X	X	X
AutoMiller	ACM	Atrium	X	X	X	X
3DOSX (Three-Dee-Ohh-Ess-Ten)	ACM	Atrium	X	X	X	X
Graphing PDA Calculator	ACM	Atrium	X	X	X	X
Morrowplots	ACM	Atrium	X	X	X	X
WinDevils Smart Home	ACM	Atrium	X	X	X	X
Simplicity through Complexity	ACM	Atrium	X	X	X	X
Gluttris	ACM	Atrium	X	X	X	X
OpenGL Stereo Graphics	ACM	Atrium	X	X	X	X
DEUS (Dynamic Emotion Utilization & Synthesis)	ACM	Atrium	X	X	X	X
Zeroconf for PDAs	ACM	Atrium	X	X	X	X
Computer Generated Natural Phenomena	ACM	Atrium	X	X	X	X
Internet TV	ACM	Atrium	X	X	X	X
Remote Attendance System	ACM	Atrium	X	X	X	X
Secure Authentication Methods	ACM	Atrium	X	X	X	X
New Renaissance	ACM	Atrium	X	X	X	X
A Collaborative Artwork Environment	ACM	Atrium	X	X	X	X
PUFFS	ACM	Atrium	X	X	X	X
CardMaster Card Games	Shift Insert	Atrium	X	X	X	X
Campustown	TRANCE	Hallway	X	X	X	X
Faces in the Crowd	WCS	2401	X	X	X	X
Engineering Hall						
Kids Science Exhibit	EOS	Hallway	X	X	X	X
Who Wants to be a Trillionaire!	Techfront	106B1	X	X	X	X
Science Fiction Technology Trivia	Techfront	106B1		X	X	X
Everitt Lab						
Asymmetric Capacitor Thrusters	Independent	165	X	X	X	X
Gene Therapy	EMBS	165	X	X	X	X
Heart Surgeries	EMBS	161	X	X	X	X
Drug Delivery Methods	EMBS	168	X	X	X	X
Stem Cells	EMBS	163	X	X	X	X
Weather Satellite Receiver	Eta Kappa Nu	260	X	X	X	X
IEEE Hardware Compression	IEEE	165	X	X	X	X
IEEE Wireless Speaker Adapters	IEEE	151	X	X	X	X
IEEE PocketPC Voting	IEEE	151	X	X	X	X
Hydrosystems Lab						
How Turbulence Affects Your Life	EHHE, IAHR, IWRA	1520	X	X	X	X
Town Flooding	EHHE, IAHR, IWRA	1520	X	X	X	X
The Water Table: Visualizing Flow Around Objects	EHHE, IAHR, IWRA	1520	X	X	X	X
Rivers, Lakes, and Oceans	EHHE, IAHR, IWRA	1520	X	X	X	X
Virtual Groundwater Remediation	EHHE, IAHR, IWRA	1518	X	X	X	X
Flying Ball	EHHE, IAHR, IWRA	1504	X	X	X	X
Ven Te Chow Hydrosystems Lab	EHHE, IAHR, IWRA	1504	X	X	X	X
Remarkable Water Behavior in Hydraulic Structures	EHHE, IAHR, IWRA	1504	X	X	X	X
Vortex Cannon	EHHE, IAHR, IWRA	1504	X	X	X	X
Weather and the Water Cycle	EHHE, IAHR, IWRA	1504	X	X	X	X
Loomis Lab						
Can Crusher and the EM Ring Gun	ANS	144		X	X	X
Astronomy and Spectroscopy:	AS	137	X	X	X	X
Taking a Good Look at Light	AS	137	X	X	X	X
Meteor Detection with Gospel Music	AS	137	X	X	X	X
The Sounds of Space!	AES	137	X	X	X	X
Infrasound: Listening to Earth's			X	X	X	X
Ultra-Low Frequency Sounds			X	X	X	X
Drop Tower	Floatin' Illini	North Lobby	X	X		
Paper Airplanes	Floatin' Illini	151	X			
Pop Rockets	Floatin' Illini	151	X			
Microgravity Research Presentation	Floatin' Illini	151	X			
On To Mars!	ISDS	outside 151	X	X	X	X
Space News	ISDS	outside 151	X	X	X	X
Moon Rocks	ISDS	outside 151	X	X	X	X
Optical Music	ISDS	outside 151	X	X	X	X
Magnetic Propulsion	Physics Society	144	X	X	X	X
Coherent Speech	Physics Society	South Lobby	X	X	X	X
Magneto Ring Toss	Physics Society	136	X	X	X	X
Physics Lecture Demos	Physics Society	136	X	X	X	X
Liquid Nitrogen Table	Physics Society	141	X	X	X	X
	Physics Society	West Lobby	X	X	X	X

PROJECT LISTING BY BUILDING

PROJECT	SOCIETY	ROOM	GRADE SCHOOL	HIGH SCHOOL	ADULT	RUNS CONT.
Materials Science and Engineering Building						
Edible Atoms	UMO	Hallway	X			X
Polymer Dispersed Liquid Crystals	UMO	Hallway		X	X	X
Fun With Shape Memory Alloys	UMO	Hallway	X	X	X	X
Introduction to Slip Casting through Mug Making	UMO	100	X	X	X	X
Materials Show	UMO	119	X	X	X	X
Freshmen MatSE projects	UMO	Hallway	X	X	X	X
Thermoelectrics	UMO	Hallway	X	X	X	X
An Introduction to Polymers Using 'Bouncy Balls'	UMO	Hallway	X	X	X	X
Mechanical Engineering Building						
Construction Equipment	ASME/PTS	135	X	X		X
Up and Away... Blimps!!!	ASME/PTS	135	X			X
Underwater Robots	ASME/PTS	49	X	X	X	X
Industrial Engineering!	IIE	153		X	X	X
Formula SAE Race Car	SAE	114	X	X	X	X
Mechanical Engineering Lab						
Let's See Some Turbulence!	ASME	1126		X	X	X
Newmark Lab						
Concrete Canoe	ASCE	Crane Bay	X	X	X	X
Steel Bridge	ASCE	Crane Bay	X	X	X	X
Quicksand	ASCE	Crane Bay	X	X	X	X
When the New Madrid Fault Moves...	ASCE	Crane Bay	X	X	X	X
Quakes—They Happen Here Too!	ASCE	Crane Bay	X	X	X	X
Groundwater Remediation	ASCE	Crane Bay	X	X	X	X
Intelligence in Transportation	ITE	Crane Bay	X	X	X	X
Roger Adams Lab						
The Magic of Chemistry	ACS	116	X	X	X	X
Fun with Oscillating Reactions	AICHE	112a	X	X	X	X
The Blast Crusade	AICHE	112a	X	X	X	X
What is Chemical Engineering, The Enigma Solved	AICHE	112a	X	X	X	X
Chemistry Magic Show	AICHE	116	X	X	X	X
Playing with Polymers	AICHE	8	X	X	X	X
Flying on Lard	AICHE	8	X	X	X	X
Vanilla Extraction	AICHE	8	X	X	X	X
Membrane Separations in Industry Today	AICHE	8	X	X	X	X
LN2 and Ice Cream: A Love Story	AICHE	8	X	X	X	X
Why Can't Pigs Fly?	AICHE	8	X	X	X	X
Environmental Chemical Engineering	AICHE	8	X	X	X	X
Efficient Heating of the Home	AICHE	8	X	X	X	X
Fun with Alcohol!!!	AICHE	8	X	X	X	X
Black Hole of Liquids	AICHE	8	X	X	X	X
Say Cheese!	AICHE	8	X	X	X	X
Injection Molding	AICHE	8	X	X	X	X
Corn Conundrum	AICHE	8	X	X	X	X
Fun with Toxic Nuclear Waste	AICHE	8	X	X	X	X
Frederick Jones: Innovator Extraordinaire	NOBCChE	8	X	X	X	X
Smile!!!	NOBCChE	8	X	X	X	X
How Air Conditioners Work	NOBCChE	8	X	X	X	X
Talbot Lab						
Remotely Piloted UAV Design	Design Build Fly	Crane Bay	X	X	X	X
Fly the Wright Flyer	AAG	Crane Bay	X	X	X	X
SAE Aero Design	SAE Aero Design	Basement	X	X	X	X
Space Shuttle Heat Shield Demonstration	AIAA	outside 103	X	X	X	X
Cetan II	Cetan II	5A	X	X	X	X
Fun with Liquid Nitrogen!	AIAA	104	X	X	X	X
Autonomous Martian Greenhouse	AIAA	103	X	X	X	X
Concrete Crushing	SEM	Crane Bay	X	X	X	X
Fluid Mechanics	SEM		X	X	X	X
Knot Tying	SEM		X	X	X	X
Mechanics of the Blues Harmonica	SEM		X	X	X	X
TAM Toys	SEM		X	X	X	X
Transportation Building						
Sticky Skyscrapers	ISGE	101		X	X	X
Fun With Robotics	ISGE	316		X	X	X
Float Away!	ISGE	Front Lawn		X	X	X
EXCITE BIKES—Bicycle trick demo and the science behind the techniques	ISGE	Front Lawn		X	X	X
Space Age Upside Down Pendulum!	ISGE	1st Floor		X	X	X
Genetic Algorithms: Evolution With A Computer	Gamma Epsilon	414		X	X	X
Robots Rule!	Gamma Epsilon	316		X	X	X
Real Projects, Real Solutions	Gamma Epsilon	1st Floor		X	X	X
Do You Want To Be A Millionaire?	Gamma Epsilon	1st Floor		X	X	X
Your Design Comes To Life	Gamma Epsilon	103		X	X	X
SPLATfest!	Gamma Epsilon	207		X	X	X
Beckman Quad						
Production Management—Shed Building	SBME	Beckman Quad	X	X	X	X
Engineering Quad						
The Principles of the Turbine Engine	AIAA	outside Talbot	X	X	X	X



Illini Union

1401 W. Green, Urbana

Map Code: I

The Illini Union Building holds meeting rooms, cafeterias, bowling alleys, the Alumni Association offices a branch of the University library, and hotel rooms.



Agricultural Engineering Sciences Building

1304 W. Pennsylvania, Urbana

Map Code: A

The Agricultural Engineering Sciences Building is home to the Agricultural Engineering Department and the Department of Food Sciences.

PROJECT DESCRIPTIONS

Agricultural Engineering Sciences Building

UIUC SAE Mini Baja

SAE Mini Baja

The Off-road Illini Team is a division of the UIUC chapter of SAE (Society of Automotive Engineers) that designs, builds, and races a single seat off-road vehicle for SAE sponsored competitions. Team members apply their classroom knowledge to real world situations. The team welcomes all students, regardless of major and/or skill level.

Room: Entrance

Audience: HS

Demo Time: Continuously

Illini Pullers

Illini Pullers—ASAE Quarter Scale Tractor Design Team

The Illini Pullers design and build a quarter scale tractor that is able to pull a sled, which is similar to a full size tractor pull. Each year the team attends their annual American Society of Agricultural Engineers sponsored Quarter Scale Tractor competition held in Moline, Illinois during the first week of June.

Room: Hallway

Audience: GS,HS,ADULT

Demo Time: Continuously

The Power and Fun of Aerodynamics

ASAE

The theme will be utilizing the fan test chamber and will show some fun stuff about air, including balancing your body in an air flow field.

Room: Hallway

Audience: GS,HS,ADULT

Demo Time: Continuously

Kill Weeds, Not Time

ASAW

Discover the benefits of self-guided variable rate sprayers over conventional sprayers currently on the market. Save both time and money through the use

of DGPS and remote sensing technology. A model constructed of Lego Mindstorm Robotics will be on display performing general agricultural applications.

Room: 1st Floor

Audience: GS,HS,ADULT

Demo Time: Continuously

Invisible Illumination Sees Starch!

Agricultural Engineering

This is an experiment using NIT system to measure the predicted extractable starch in corn.

Room: 1st Floor

Audience: GS,HS,ADULT

Demo Time: Continuously

Off-road Illini: SAE Mini Baja

SAE

The Off-road Illini Team is a division of the UIUC chapter of SAE (Society of Automotive Engineers) that designs, builds, and races a single seat off-road vehicle for SAE sponsored competitions. Team members apply their classroom knowledge to real world situations. The team welcomes all students, regardless of major and/or skill level.

Room: Entrance

Audience: GS,HS,ADULT

Demo Time: Continuously

Coordinated Science Research Laboratory

Wireless Networking

Coordinated Science Lab

The Coordinated Science Laboratory's interdisciplinary teams research new and innovative computing, communications, signal processing, and control technologies. Come enjoy several projects including, remote vehicle management, an ad hoc wireless network, a multi-vehicle rover network, and control experiments.

Room: B13

Audience: GS, HS

Demo: 10AM to 4PM on Friday and 9AM to 1PM on Saturday.

Digital Computer Laboratory

FoozBot!

ACM

A foosball-playing robot. Come play a game or two of table soccer against a robotic opponent. By utilizing computer vision, artificial intelligence, and fine mechanical control, FoozBot plays a mean game. Try to beat the 'bot!

Room: Atrium

Audience: GS,HS,ADULT

Demo Time: Continuously

The QuuxBox

ACM

The QuuxBox is SIGUnix's integrated, powerful set-top appliance that serves as a capable and flexible home media center running embedded Linux.

Room: Atrium

Audience: ADULT

Demo Time: Continuously

AutoMiller

ACM

CNC milling allows you to take computer descriptions of objects have a machine automatically cut them out of wood or metal. AutoMiller is an inexpensive, small-scale version of this concept.

Room: Atrium

Audience: GS,HS,ADULT

Demo Time: Continuously

3DOSX (Three-Dee-Ohh-Ess-Ten)

ACM

MacWarriors has enhanced, our renowned three dimensional file system browser, 3DOSX, that debuted at last year's Engineering Open House and took second place in the main category. 3DOSX has since been featured on Slashdot and the ACM Crossroads publication.

Room: Atrium

Audience: GS,HS,ADULT

Demo Time: Continuously

Graphing PDA Calculator

ACM

Replace your old, bulky graphing calculator with a simple program for PocketPC. Our program merges the capabilities of a TI-89 with the flexibility and power of a PocketPC.

Room: Atrium

Audience: HS,ADULT

Demo Time: Continuously

Morrowplots

ACM

Morrowplots is a self-playing RPG/Sim hybrid. The game is played by the user creating a "student" with certain factors of personality, and allowing the program to automatically play out his or her academic career before the player's eyes.

Room: Atrium

Audience: GS,HS,ADULT

Demo Time: Continuously

WinDevils Smart Home—Simplicity through Complexity

ACM

The idea of the "smart home" has been envisioned for many years now. A variety of technologies necessary for a Smart Home have only recently made their way onto the market. The result of which is both a highly feasible and incredibly useful set of products to be deployed as a unified "Smart Home".

Room: Atrium

Audience: GS,HS,ADULT

Demo Time: Continuously

Gluttris

ACM

A simple OpenGL tetris clone that pits a human opponent (you) against a reasonably intelligent tetris-playing AI (gluttris) in a bloody struggle of life and death (points).

Room: Atrium

Audience: GS,HS,ADULT

Demo Time: Continuously



Coordinated Science Lab

1308 W. Main St., Urbana

Map Code: D

Coordinated Science Lab is situated in the Computer and Systems Research Laboratory, and serves as a research building.

OpenGL Stereo Graphics

ACM

An immersing 3D OpenGL game using Stereoscopic glasses that make the images pop out of the screen.

Room: Atrium

Audience: GS,HS,ADULT

Demo Time: Continuously

DEUS (Dynamic Emotion Utilization & Synthesis)

ACM

DEUS strives to find the perfect balance between the captivating stories of RPGs and the freedom of action games. Allowing the player to interact with emotion modeled NPCs using natural vocabulary, DEUS creates a living, breathing world where the player becomes the center of an unfolding, epic adventure.

Room: Atrium

Audience: HS,ADULT

Demo Time: Continuously



Digital Computing Lab

1304 W. Springfield, Urbana

Map Code: E

The Digital Computing Lab is home to the Department of Computer Science and the Computing and Communications Services Office.

Zeroconf for PDAs

ACM

Zeroconf is a way to obtain an IP without requiring a server. Imagine going anywhere and having a net connection and being able to talk to all the other people on the same network. We plan to integrate this protocol into PDAs.

Room: Atrium

Audience: HS, ADULT

Demo Time: Continuously

Computer Generated Natural Phenomena

ACM

As computers are used more to simulate the real world, new techniques must be developed for quickly displaying natural scenes of immense complexity. We have developed a system that creates high quality terrain, sky, plants and water for simulation and virtual environment applications.

Room: Atrium

Audience: HS, ADULT

Demo Time: Continuously

Faces in the Crowd

WCS

Face recognition is a heavily researched and rapidly developing field. Our exhibit will interactively demonstrate the capability of face recognition software to identify and distinguish individuals in a group. Visitors will have their photos taken first on an individual basis, and then in a group setting to which the face recognition will be applied.

Room: 2401

Audience: GS, HS, ADULT

Demo Time: Continuously

Campustown

TRANCE

Have you ever wanted to build your own university from scratch? Now with our fun game you can! Control things such as tuition, teacher salaries, and hippie factor and see your school rise to the nation's elite!

Room: Hallway

Audience: GS, HS, ADULT

Demo Time: Continuously

Internet TV

ACM

Live TV over the internet is a seriously underdeveloped technology. We are correcting this problem by developing software to stream cable TV in MPEG-4 over the internet from a central server to clients, including set-top boxes and wireless devices.

Room: Atrium

Audience: GS, HS, ADULT

Demo Time: Continuously

Remote Attendance System

ACM

Our project is designed to keep track of attendance for a variety of events. It is designed to run on mobile computers that can be connected together with normal or wireless ethernet so that attendance of the entire group can be discerned at a glance.

Room: Atrium

Audience: GS, HS, ADULT

Demo Time: Continuously

Secure Authentication Methods

ACM

In our world of increasing technologies use, we have to make sure it is utilized properly. Methods and schemes of authentication have evolved a lot in the last decade, but no matter how complex the method is, there is always a human factor involved, which is usually the weakest link - stolen or written down passwords being simple example.

Room: Atrium

Audience: GS, HS, ADULT

Demo Time: Continuously

CardMaster Card Games

Shift Insert

Do you like card games? Come check out CardMaster, which allows you to play against others over the internet or challenge intelligent computer players. The versatile card game engine that we developed allows any programmer to easily create virtually any card game and play it in our program, such as hearts, spades, euchre, gin, gin rummy, and more.

Room: Atrium

Audience: GS, HS, ADULT

Demo Time: Continuously

New Renaissance — A Collaborative Artwork Environment

ACM

With the New Renaissance Project, we present a brand new paradigm for teaching and participating in the creation of art. Individuals the world over can collaborate on creating still, animated, 3d model, and other forms of artistic expression. Individuals can contribute what they most excel at, taking artistic design out of the realm of the individual mind, and creating a style and process for artwork never seen before.

Room: Atrium

Audience: GS, HS, ADULT

Demo Time: Continuously

PUFFS

ACM

The Practical Userland Fake FileSystem is a software virtual file system layer for Unix. It allows unprivileged users to effectively mount a variety of file system types.

Room: Atrium

Audience: ADULT

Demo Time: Continuously

Engineering Hall

Who Wants to be a Trillionaire!

Technological Frontiers Society (TechFront)

Like to read science fiction and watch sci-fi movies? Put your sci-fi trivia knowledge to the test and take a shot at winning a Trillion dollars (in Year 3003 dollars, ten dollars worth of sci-fi prize goodness after adjusting for inflation!) at the TechFront Future Fun Fair!

Room: 106B1

Audience: GS, HS

Demo Time: Continuously

Science Fiction Technology Trivia

Technological Frontiers Society (TechFront)

Are you a science fiction buff? In many science fiction books and movies, dif-

ferent terms have been invented for types of technology and inventions. Over the years, many of these terms have made it into popular usage. Test your knowledge of these terms at the TechFront Future Fun Fair.

Room: 106B1

Audience: HS, ADULT

Demo Time: Continuously

Kids Science Exhibit

Engineering Outreach Society

Local elementary school children display mini science projects that demonstrate basic scientific principles.

Room: outside 110A

Audience: GS, HS, ADULT

Demo Time: Continuously

Everitt Lab

Asymmetric Capacitor Thrusters

Independent

A demonstration of the Biefeld-Brown Effect; generating thrust without a propellant.

Room: 165

Audience: GS, HS, ADULT

Demo Time: Continuously

Heart Surgeries

EMBS (Engineering in Medicine and Biology Society)

Discover how the creation of artificial heart parts has brought innovation to the fascination of open-heart surgery!

Room: 161

Audience: GS, HS, ADULT

Demo Time: Continuously

Drug Delivery Methods

EMBS (Engineering in Medicine and Biology Society)

Imagine taking your insulin like you would your asthma medication! Come learn how new methods such as microsphere technologies, lipid & polymer based delivery systems, edible vaccines, pro-drugs, and iontophoresis are



Engineering Hall

1308 W. Green, Urbana

Map Code: F

Engineering Hall, an example of Renaissance Revival architecture, was built in 1894. It is the administrative hub of the College of Engineering and home to a number of Engineering Council Societies.

being developed to more efficiently treat diseases.

Room: 168

Audience: GS, HS, ADULT

Demo Time: Continuously

Stem Cells

EMBS (Engineering in Medicine and Biology Society)

A world without wheelchairs? It's closer than you could imagine! Come learn how the exciting field of stem cells research could revolutionize the world we live in.

Room: 163

Audience: GS, HS, ADULT

Demo Time: Continuously

Gene Therapy

EMBS (Engineering in Medicine and Biology Society)

The Human Genome: a blueprint for all human life, pre-determined from conception until death. Or is it? Can we



Everitt Lab

1406 W. Green, Urbana

Map Code: G

Everitt Lab is home to the Department of Electrical and Computer Engineering and is named after the late William L. Everitt, former department head and dean of engineering.

deliver new genes into our body to cure diseases like cancer? Come learn more about Gene therapy: the new treatment!

Room: 165

Audience: GS,HS,ADULT
Demo Time: Continuously

Weather Satellite Receiver

Eta Kappa Nu

Weather satellites constantly image the earth. We built a system to receive and display some of these images. Additionally, the technology "behind the scenes" is explained.

Room: 260

Audience: GS,HS,ADULT
Demo Time: Continuously

IEEE Hardware Compression

Institute of Electrical and Electronics Engineers

You have probably used Winzip, Winrar, Winace, and other software compression programs in the past. Now we have taken those compression algorithms and implemented them in hardware. Come and learn about the speed gains of hardware compression.

Room: 165

Audience: HS,ADULT
Demo Time: Continuously

IEEE Wireless Speaker Adapters

Institute of Electrical and Electronics Engineers

Tired of connecting those speaker wire cables in your new home theatre system? Come and listen to our speakers featuring wireless speaker adapters. These adapters can be used in any current home speaker system to let you experience the full audio range of your speakers without the lengthy wires.

Room: 151

Audience: HS,ADULT
Demo Time: Continuously

IEEE PocketPC Voting

Institute of Electrical and Electronics Engineers

Come and see how the EOH judges are voting this year. New digital forms integrated into a database allow for

quick tallying of scores and results. Go paperless with PocketPC voting.

Room: 151

Audience: HS,ADULT
Demo Time: Continuously

Hydrosystems Lab

How Turbulence Affects Your Life

EHHE, IAHR, IWRA

Turbulence affects your life in more ways than you think. Come and learn about the nature of turbulence and how we can harness its power to benefit our everyday lives.

Room: 1520

Audience: GS,HS,ADULT
Demo Time: Continuously

Virtual Groundwater Remediation

EHHE, IAHR, IWRA

Use an interactive computer program developed here at UIUC to simulate cleaning up contaminated groundwater at the site of a toxic spill. By placing extraction wells at key locations you can remove the contaminated water and see how the well affects the flow of groundwater.

Room: 1518

Audience: HS,ADULT
Demo Time: Continuously

Flying Ball

EHHE, IAHR, IWRA

Ever wonder how an airplane stays aloft? Come and see a simple experiment demonstrating Bernoulli's Principle using jets of air and ordinary balls. The hovering balls will seem like magic, but it's no illusion—just physics.

Room: 1504

Audience: GS,HS,ADULT
Demo Time: Continuously

Remarkable water behavior in hydraulic structures

EHHE, IAHR, IWRA

Water only flows downhill, right? Come and see water flowing uphill naturally

and a number of other interesting phenomena as we show how flows behave as they pass over and through hydraulic structures like spillways and sluice gates.

Room: 1504

Audience: GS,HS,ADULT
Demo Time: Continuously

Ven Te Chow Hydrosystems Laboratory

EHHE, IAHR, IWRA

With giant wave tanks, 50 and 20 meter tilting flumes, physical models, and more, this 11,000 sq. ft. hydraulics laboratory houses numerous state of the art facilities used in cutting edge research. Let us give you a tour.

Room: 1504

Audience: GS,HS,ADULT
Demo Time: Continuously

Town Flooding

EHHE, IAHR, IWRA

Human intervention in the flow of natural rivers can have serious implications. See how we use scale models of problem areas to design ways to minimize flooding and related problems. Our lab recently used such models to redesign the UIUC section of Boneyard creek to alleviate flooding.

Room: 1520

Audience: GS,HS,ADULT
Demo Time: Continuously

Vortex Cannon

EHHE, IAHR, IWRA

Come and see an experiment in which huge smoke ring vortices are shot out of home-made cannons triggered by hand and by music. Watch them dance and interact and eventually break up due to turbulence.

Room: 1504

Audience: GS,HS,ADULT
Demo Time: Continuously

The Water Table: Visualizing Flow Around Objects

EHHE, IAHR, IWRA

Ever wonder how a fluid moves around objects in its path? Come and experiment with a water table that

allows you to see the flow patterns around objects and the influence of sources and sinks.

Room: 1520

Audience: GS,HS,ADULT
Demo Time: Continuously

Weather and the Water Cycle

EHHE, IAHR, IWRA

Come and create clouds in a bottle, measure the lift of a hot air balloon, and play with a hydrologic model. You'll learn about the weather, buoyancy, and the water cycle in this hands-on project.

Room: 1504

Audience: GS,HS,ADULT
Demo Time: Continuously

Rivers, Lakes, and Oceans

EHHE, IAHR, IWRA

Using hands on experiments, explore how density differences can affect physical processes in rivers, lakes, oceans, and even the atmosphere. Learn about our dye tracking experiments on the Hudson River in New York.

Room: 1520

Audience: GS,HS,ADULT
Demo Time: Continuously

Loomis Lab

Infrasound: Listening to Earth's Ultra-Low Frequency Sounds

Audio Engineering Society

The human ear can only hear frequencies of 20 hertz to 20 kilohertz. Anything above this is ultrasound and below is infrasound. If we could hear infrasound, we would hear earthquakes, volcanoes, and thunderstorms from miles away. We built detectors to capture what your ear cannot hear.

Room: 137

Audience: GS,HS,ADULT
Demo Time: Continuously



Kenney Annex

1406 W. Springfield, Urbana

Map Code: J

Kenney gym will be the headquarters for EOH. It is the home of the Jerry Sanders, Grade School, and Onsite Design Competitions.

NOTE: There are no bathrooms in Kenney Gym.

Can crusher and the EM Ring gun

American Nuclear Society

One will be a soda pop can crusher that uses electro-magnetic forces to grip the can, and the other will be like the physics 112-ring gun, also powered by electro-magnetics.

Room: 144

Audience: GS,HS,ADULT
Demo Time: Every Hour

Astronomy and Spectroscopy: Taking a Good Look at Light

Astronomical Society

What do astronomers do anyway? What would you find at the nearest observatory? Just by looking at the light from an object, we can figure out what atoms compose the object and a whole lot more, thanks to the spectrometer! Come find out what gives



Loomis Lab

104 S. Goodwin, Urbana

Map Code: L

The Loomis Laboratory of Physics is home to the Department of Physics.

stars and galaxies their color with our spectrometer destined for undergraduate research.

Room: 137

Audience: GS,HS,ADULT

Demo Time: Continuously

Optical Music

Physics Society

Have you ever wanted to know how a CD player works? In this exhibit we will play music from our homemade 2 feet wide CD built so that you can see all the parts.

Room: 144

Audience: GS,HS,ADULT

Demo Time: Continuously

Magnetic Propulsion

Physics Society

Our car has a motor with no moving parts. Find out how we did it using magnets! Our model uses technology very similar to the system on the "V-2 Vertical Velocity" roller coaster, and the same technology that will be used in the maglev trains of the future!

Room: South Lobby

Audience: GS,HS,ADULT

Demo Time: Continuously

Coherent Speech

Physics Society

Come send your voice across the room on a beam of light! Our device works just like a CB radio, except instead of invisible radio waves, your voice is sent through a laser beam to a receiving station on the other side of the room.

Room: 136

Audience: HS,ADULT

Demo Time: Continuously

Magneto Ring Toss

Physics Society

Like playing ring toss, but too lazy to go to all the trouble of throwing the ring yourself? Then you will want to play Magneto Ring Toss! Aim and fire electromagnetic cannons and try to hit the target. From the carnival to the

physics lab, ring toss has never been so "attractive".

Room: 136

Audience: GS,HS

Demo Time: Continuously

Physics Lecture Demos

Physics Society

Come see some of our favorite and most exciting physics demonstrations from the introductory physics courses here at the university! Learn about basic physics concepts such as motion, electricity, light, and sound and how they are useful in the different fields of engineering, as well as everyday life.

Room: 141

Audience: GS,HS,ADULT

Demo Time: 9:30 AM, 11:00 AM, 12:30 AM, 2:00 AM

Liquid Nitrogen Table

Physics Society

Nitrogen is a gas that makes up more than 70% of our atmosphere and liquefies at -320 degrees Fahrenheit! At the liquid nitrogen table you'll see several fun physics experiments with solids, liquids and gasses, pressure, and most importantly...frozen fruit!!

Room: West Lobby

Audience: GS,HS,ADULT

Demo Time: Continuously

On To Mars!

Illini Space Development Society

The next frontier is Mars. Nothing has held the human imagination quite like the red planet. Come see what the nations of the world have done to explore it! Exhibit includes knowledgeable students and several poster displays, including 3D pictures of the Martian surface, and a chance to try your hand flying an airplane on Mars.

Room: outside 151

Audience: GS,HS,ADULT

Demo Time: Continuously

Space News

Illini Space Development Society

What's going on in the space industry today? What's the latest scoop on access to space? Find out the latest

and greatest at the Space News booth in the Northwest corner of Loomis Lab, hosted by the Illini Space Development Society, a Chapter of the National Space Society.

Room: outside 151

Audience: HS,ADULT

Demo Time: Continuously

Moon Rocks

Illini Space Development Society

Yes, we did go to the Moon. And we have proof. An actual moon rock on loan to the Illini Space Development Society from NASA-Glenn research center will be on display in the Northwest corner of Loomis Lab. Come check it out!

Room: outside 151

Audience: GS,HS,ADULT

Demo Time: Continuously

Meteor Detection with Gospel Music

Astronomical Society

By using a small radio antennae we can detect the signals of distant radio stations being reflected by meteor trails and figure out how many meteors are falling per second! Our display also has general info on meteors and radio astronomy for all ages!

Room: 137

Audience: GS,HS,ADULT

Demo Time: Continuously

Drop Tower

Floatin' Illini

...3, 2, 1, Microgravity! Fun demonstration of freefall.

Room: North Lobby

Audience: GS,HS

Demo Time: Continuously

Paper Airplanes

Floatin' Illini

Learn from the Pros. Let AAE students teach you how to make the best paper airplanes ever.

Room: 151

Audience: GS

Demo Time: 1:30pm-2:00pm

The Sounds of Space!

Astronomical Society

Radio waves surround us in our daily lives, but did you know that they fill outer space too! Thousands of objects chirp and squirm in the radio sky. Our exhibit has samples of these sounds from Jupiter, Saturn, our own live radio telescope and much more.

Room: 137

Audience: GS,HS,ADULT

Demo Time: Continuously

Pop Rockets

Floatin' Illini

You too can be a rocket scientist. Make alka-seltzer powered rockets that soar to 10 to 15 feet in the air.

Room: 151

Audience: GS

Demo Time: 10:30 AM-11:00 AM, 2:30pm-3:00pm

Microgravity Research Presentation

Floatin' Illini

Floatin' Illini is a microgravity research club that participates in NASA's Reduced Gravity Student Flight Opportunities Program. This presentation will a brief overview of the two projects our team submitted to fly on the Weightless Wonder. These two projects are "Two-Fuel Formation of Flame Balls in Microgravity" and "Axial Segregation in Microgravity."

Room: 151

Audience: HS,ADULT

Demo Time: 11:30 A.M.

Materials Science and Engineering Building

Edible Atoms

UMO

An introduction to the Material Science topics of Bravais Lattices, Polymerization, and Sintering using snack foods.

Room: Hallway

Audience: GS

Demo Time: Continuously



Materials Science and Engineering Building

1304 W. Green, Urbana

Map Code: M

The Materials Science and Engineering Building holds labs and offices for the Department of Materials Science and Engineering.

Polymer Dispersed Liquid Crystals

UMO

Polymer Dispersed Liquid Crystal (PDLC) materials are a relatively new class of materials that hold a good deal of potential for use in Liquid Crystalline Displays. PDLC samples will be assembled and their properties demonstrated on site.

Room: Hallway

Audience: HS,ADULT

Demo Time: Continuously

Fun With Shape Memory Alloys

UMO

Nitinol wires have the ability to return to their original shape after being deformed with the application of heat.



Mechanical Engineering Building

1206 W. Green, Urbana

Map Code: N

The Mechanical Engineering Building is home of the Department of Mechanical and Industrial Engineering.

Samples of this fascinating material will be demonstrated and their properties explained.

Room: Hallway

Audience: GS,HS,ADULT

Demo Time: Continuously

Introduction to Slip Casting through Mug Making

UMO

Ceramics in various stages of processing will be shown (ceramic powder, slip, just removed from the mold, after firing, etc.). Visitors can touch the examples and experience the differences that occur from using different types of ceramic materials.

Room: 100

Audience: GS,HS,ADULT

Demo Time: Continuously

Materials Show

UMO

A great introduction to Material Science in the form of a short movie. This project is always entertaining and informative.

Room: 119

Audience: GS,HS,ADULT

Demo Time: Every Hour

Freshmen MatSE projects

UMO

Materials in Sports Equipment, Materials Anatomy of a Motor, Crystallization in MatSE: An Example Using the Taste and Texture of Chocolate, Blacksmithing: the Metallurgical Root of MatSE-How Crystal Structure Makes Iron Soft as a Paper Clip or Hard as a File, What is a vacuum, how do we make one (and why do we care)? How does a CD really work? Etc.

Room: Hallway

Audience: GS,HS,ADULT

Demo Time: Continuously

Thermoelectrics

UMO

Thermoelectrics are solid-state devices that can take a thermal gradient and produce electricity through the Seebeck effect. Through the Peltier effect, thermoelectrics can act as a heating or

cooling mechanism when DC electricity is applied. Thermoelectric applications include: refrigeration, deep space exploration, and computer component cooling.

Room: Hallway

Audience: HS,ADULT

Demo Time: Continuously

An Introduction to Polymers Using 'Bouncy Balls'

UMO

This project will demonstrate the properties of polymers through the use of a homemade 'bouncy ball.' Visitors are welcome to participate in the hands on and fun introduction to one of the concentrations of the MatSE department.

Room: Hallway

Audience: GS,HS,ADULT

Demo Time: Continuously

Mechanical Engineering Building

Construction Equipment

ASME/Pi Tau Sigma

Did you play with construction equipment toys as a kid? Think you know how construction equipment works? How DO they lift such heavy loads without tipping over? This exhibit offers this and more! Plus, we have the toys to play with too!

Room: 135

Audience: GS,HS

Demo Time: Continuously

Formula SAE Race Car

SAE

Formula SAE is where students design, fabricate, and compete with small open wheeled racecars. The restrictions on the car are limited so that the students' knowledge, creativity, and imagination are challenged. The cars are taken to Detroit annually for competition with over 120 other colleges and universities throughout the world.

Room: 114

Audience: GS,HS,ADULT

Demo Time: Continuously

Up and Away... Blimps!!!

ASME/Pi Tau Sigma

What allows a blimp to fly? Buoyancy of course! Learn about the lift potential of different gases and figure which ones carry the heaviest loads. Then use this knowledge to see how a blimp flies. Perhaps it might spark your interest to create your own.

Room: 135

Audience: GS

Demo Time: Continuously

Industrial Engineering!

IIE

Industrial engineering is everywhere in our world. Our exhibit shows how it affects everyone's everyday lives.

Room: 153

Audience: HS,ADULT

Demo Time: Continuously

Mechanical Engineering Lab

Let's See Some Turbulence!

ASME

Every car, plane, or underwater vessel in the world was most likely run through wind tunnel testing. Come see how they work and how they can be used to help in design for aerodynamics.

Room: 1126

Audience: HS,ADULT

Demo Time: Continuously

Newmark Lab

Concrete Canoe—Crane Bay

American Society of Civil Engineers

Concrete is heavy, and it sinks in water, right? Guess again! Come meet a group of civil engineers who are using a lighter concrete to construct a racing canoe!

Room: Crane Bay

Audience: GS,HS,ADULT

Demo Time: Continuously

Steel Bridge

American Society of Civil Engineers

Come check out this beautiful work of engineering combining strength, function, and weight. The steel bridge is designed and built entirely by students to support the largest weight, with the bridge as light as possible. Get up close and personal with STEEL and the latest advancements in steel technology and concepts in bridge building.

Room: Crane Bay

Audience: GS,HS,ADULT

Demo Time: Continuously

Quicksand

American Society of Civil Engineers

Sorry, it's not quite big enough to drop an annoying salesman into, but it's still pretty fun to see what happens when soil liquefaction occurs. Stick your hand into the pit and try pulling it out!

Room: Crane Bay

Audience: GS,HS,ADULT

Demo Time: Every Hour

When the New Madrid Fault Moves...

American Society of Civil Engineers

What is it like to be in a major earthquake? Well, we're not going to move the floor under your feet, but come see the Shake Table demo to see what happens in an actual earthquake.

Room: Crane Bay

Audience: GS,HS,ADULT

Demo Time: Every Hour

Quakes—They Happen Here Too!

American Society of Civil Engineers

Quakes are not a phenomenon unique to the Pacific Rim, but many people don't realize that New Madrid fault could wipe out St Louis and Memphis. Come see what engineers must consider in their structures in the Midwest. Build with K'Nex and test its strength on a miniature shake table.

Room: Crane Bay

Audience: GS,HS,ADULT

Demo Time: Continuously



Mechanical Engineering Lab

105 S. Mathews, Urbana

Map Code: O

The Mechanical Engineering Lab has labs and offices for the Department of Mechanical and Industrial Engineering.

Groundwater Remediation

American Society of Civil Engineers

Is your well water safe? It is supposed to be all the time, but occasionally a contaminant leaks into the water table, and your local environmental engineer is called out to help fix the problem. Check out this fun little computer game that gives you an idea of what they do.

Room: Crane Bay

Audience: GS,HS,ADULT

Demo Time: Continuously

Intelligence in Transportation

Institute of Transportation Engineers

Computers are everywhere now, especially in transportation. They fly airplanes from takeoff to landing, coordinate traffic signals, and dispatch emergency vehicles. They are integral parts of Intelligent Transportation Systems. Come see examples of how technology helps you get from point A to point B.

Room: Crane Bay

Audience: GS,HS,ADULT

Demo Time: Continuously



Newmark Lab

205 N. Mathews, Urbana

Map Code: P

The Newmark Civil Engineering Building is home to the Civil Engineering Department.

Roger Adams Lab

Fun with Oscillating Reactions

American Institute of Chemical Engineers

An interesting area of chemical engineering involves reactions that oscillate back and forth between several compounds. Multi-colored reactions are common instances of such reactions. Similar reactions have a variety of applications in biological processes. Visual demonstrations of reactions that fluctuate between two colors will be presented.

Room: 112a

Audience: GS,HS,ADULT
Demo Time: Continuously

Chemistry Magic Show

American Institute of Chemical Engineers
Our show promises to WOW all ages and levels of expertise and will combine the "old stand by" demonstra-

tions with some new demonstrations that are more exciting than ever! This 10-demonstration show promises to be exciting and fun.

Room: 116

Audience: GS,HS,ADULT
Demo Time: 10 AM Friday, 10 AM Saturday, 2pm Friday, 1pm Saturday

Playing with Polymers

American Institute of Chemical Engineers

The advent of polymer commercialization changed the consumer market immediately. Therefore, detailed explanation of intricacies in the polymer production process is necessary. Also, child marketed demonstrations will show the applications of polymers to the toy industry.

Room: 8

Audience: GS,HS,ADULT
Demo Time: Continuously

Flying on Lard

American Institute of Chemical Engineers

The project will demonstrate the process of converting discarded cooking oil into a useful, environmentally friendly energy source known as biodiesel. This fuel will then be used to power a diesel engine.

Room: 8

Audience: HS,ADULT
Demo Time: Continuously

Vanilla Extraction

American Institute of Chemical Engineers

We will investigate the chemical engineering aspects of extracting vanilla flavor from vanilla beans. We will use several procedures for extraction and will also explain how this process is done on a factory scale.

Room: 8

Audience: GS,HS,ADULT
Demo Time: Continuously

Membrane Separations in Industry Today

American Institute of Chemical Engineers

Membrane separations are an important and ever growing industrial process, which is vital to many industries. Membranes are used in a variety

of industrial processes including filtration systems, pervaporation processes, and facilitated transport of materials and ions.

Room: 8

Audience: GS,HS,ADULT
Demo Time: Continuously

LN2 and Ice Cream: A Love Story

American Institute of Chemical Engineers

Ice cream is one of everyone's all-time favorite foods. The project will describe and demonstrate ice cream production as performed with liquid nitrogen, while incorporating chemical engineering principles such as thermodynamics. Of course, free samples will be available.

Room: 8

Audience: GS,HS,ADULT
Demo Time: Continuously

Why Can't Pigs Fly?

American Institute of Chemical Engineers

Pigs might fly if they only knew a little more about fluid mechanics. This project has a laser-based demonstration of boundary layers and an interactive wind tunnel demo. Come see how shape and orientation affect flow over objects.

Room: 8

Audience: GS,HS,ADULT
Demo Time: Continuously

Environmental Chemical Engineering

American Institute of Chemical Engineers

This project explores the environmental side of chemical engineering. Specifically, the methods of water purification, especially microfiltration, will be demonstrated.

Room: 8

Audience: GS,HS,ADULT
Demo Time: Continuously

The Blast Crusade

American Institute of Chemical Engineers

Have you ever wondered how they do those huge explosions in the movies and TV? Well, this project will be dis-

cussing the chemistry/engineering behind pyrotechnics and explosives.

Room: 112a

Audience: GS,HS,ADULT
Demo Time: Friday 11AM, Friday 1PM, Saturday 11AM, Saturday 12PM

Efficient Heating of the Home

American Institute of Chemical Engineers

The project is an examination of heat exchange processes involved in heating a home. Different methods will be evaluated for cost efficiency by utilizing model homes.

Room: 8

Audience: GS,HS,ADULT
Demo Time: Continuously

Fun with Alcohol!!!

American Institute of Chemical Engineers

Are you a connoisseur of fine alcoholic beverages from across the globe, or are you the type that drinks whatever is the special of the night at the local bar? No matter what your taste may be, come learn about what is in your glass and how it is made from our resident Chemical Engineer experts!

Room: 8

Audience: HS,ADULT
Demo Time: Continuously

Black Hole of Liquids

American Institute of Chemical Engineers

This project will apply principles of chemical engineering to the process of paper towel production. There will be demonstrations including samples of paper towels and absorbent powders of differing strengths. Come find out how and why paper towels work like they do.

Room: 8

Audience: GS,HS,ADULT
Demo Time: Continuously

What is Chemical Engineering—The Enigma Solved

American Institute of Chemical Engineers

The project will explain exactly what chemical engineering is all about by correlating certain principles to everyday objects and occurrences.



Roger Adams Lab

600 S. Mathews, Urbana

Map Code: R

Roger Adams laboratory is home to the Department of Chemical Engineering.

Demonstrations will include reactors, fluid mechanics, and heat transfer, among others.

Room: 112a

Audience: GS,HS,ADULT
Demo Time: Continuously

Say Cheese!

American Institute of Chemical Engineers

Processed cheese spread production methods involve several chemical engineering principles, such as fluid dynamics and thermodynamics. This project will explain how these principles are applied in the manufacturing process. We will cover the entire start-to-finish process, from milk to the box you find on the grocery store shelf.

Room: 8

Audience: GS,HS,ADULT
Demo Time: Continuously

Injection Molding

American Institute of Chemical Engineers

The project will explain polymer chemistry and its use in injection molding. EOH keychains will be made on site and given away to several lucky members of the public.

Room: 8

Audience: GS,HS,ADULT
Demo Time: Continuously

Corn Conundrum

American Institute of Chemical Engineers

Corn is one of the most versatile products in the world. Everything from sweeteners, starches, and ethanol can be obtained from corn. This project provides real life examples of the many applications of corn byproducts.

Room: 8

Audience: GS,HS,ADULT
Demo Time: Continuously

Fun with Toxic Nuclear Waste

American Institute of Chemical Engineers

The project will deal with treatment and storage of nuclear waste, as well as production and disposal of uranium hexafluoride. In addition, the age-old

question will finally be answered, "Why is nuclear waste so harmful, anyway?"

Room: 8

Audience: GS,HS,ADULT
Demo Time: Continuously

Frederick Jones: Innovator Extraordinaire

NOBCCHE

Frederick Jones (1893-1961) was one of the most prolific inventors ever. Having received over sixty patents throughout his career and forty in the area of refrigeration alone, Jones was years ahead of his time in food preservation, mechanics, cooling, and heating.

Room: 8

Audience: GS,HS,ADULT
Demo Time: No demo required



Talbot Lab

104 S. Wright, Urbana

Map Code: T

Talbot Laboratory houses the Department of Aeronautical and Astronautical Engineering and the Department of Theoretical and Applied Mechanics.

Smile!!!

NOBCChE

Most Americans brush their teeth every morning with hopes of achieving that fresh from dentist feeling. Have you ever thought about what goes into making toothpaste? What does mouthwash actually do and why does your mouth feel so clean after using it? Why are there so many types of toothpastes on the market and is there really a difference between them?

Room: 8

Audience: GS,HS,ADULT

Demo Time: Continuously

How Air Conditioners Work

NOBCChE

When summer heat sets in the air conditioner becomes a very important part of our daily lives. Most people are familiar with what an air conditioner does, but some may not understand how they work. This project will explain

the chemical engineering principles of air conditioning systems in an understandable and interesting way.

Room: 8

Audience: GS,HS,ADULT

Demo Time: Continuously

The Magic of Chemistry

Alpha Chi Sigma

Explore the wonders of everyday phenomena through the chemical world. Interactive shows and demonstrations allow viewers to get a better understanding of world around us through chemistry presented by Alpha Chi Sigma, Professional Chemistry Fraternity.

Room: 116

Audience: GS,HS,ADULT

Demo Time: Every Hour

Talbot Laboratory

Remotely Piloted UAV Design

Design Build Fly

Each year the AIAA Design Build Fly (DBF) Team designs, fabricates, and flies an unmanned aerial vehicle in an annual competition sponsored by the Cessna Aircraft Company and the Office of Naval Research. This year, a remote payload drop and a simulated antenna are making the design particularly challenging.

Room: Crane Bay

Audience: GS,HS,ADULT

Demo Time: Continuously

Fly the Wright Flyer

Applied Aerodynamics Group

2003 marks the 100th anniversary of the Wright Brothers' historic first flight in Kitty Hawk, North Carolina. Test your piloting skills on our realistic computer simulation of their Flyer, the world's first successful heavier-than-air, manned aircraft. Controlling the Flyer is a challenge for any pilot. Do you have what it takes?

Room: Crane Bay

Audience: GS,HS,ADULT

Demo Time: Continuously

SAE Aero Design

SAE Aero Design

SAE Aero Design is a collegiate design competition where students design and build a model radio controlled aircraft that can lift the most payload. Designs from last year and this year will be displayed along with explanations and demonstrations on high lift airfoils using a simple wind tunnel.

Room: Basement

Audience: GS,HS,ADULT

Demo Time: Continuously

Space Shuttle Heat Shield Demonstration

AIAA

During re-entry the space shuttle heats up to amazing temperatures! These temperatures are only controlled by hundreds of small ceramic tiles that dissipate heat. See actual shuttle tiles and how effective they really are.

Room: outside 103

Audience: GS,HS,ADULT

Demo Time: Continuously

Cetan II

Cetan II

Cetan II is a project run through the Aeronautical and Astronautical Engineering program at the University of Illinois. The goal of the project is to build a human powered hydrofoil capable of breaking the world speed record for that type of craft.

Room: 5A

Audience: GS,HS,ADULT

Demo Time: Continuously

Fun with Liquid Nitrogen!

AIAA

When objects get cold enough, they break. Come see the effects of super-cool temperatures on everyday objects and see our liquid nitrogen propulsion demonstration.

Room: 104

Audience: GS,HS,ADULT

Demo Time: Continuously

Autonomous Martian Greenhouse

AIAA

In order travel to other planets, humans have to develop alternatives to stored consumables such as air, water, and food. The Inflatable Plant Growth Module is a technological test bed for advanced life support on Mars.

Room: 103

Audience: GS,HS,ADULT

Demo Time: Continuously

Concrete Crushing

Society for Experimental Mechanics

Watch us demolish concrete cylinders in our three million pound testing machine! Each cylinder test will have a forklift drive through the crane bay and crush a concrete cylinder.

Room Number: Large Crane Bay

Audience: GS, HS, ADULT

Demo Times: 10:00AM, 11:30AM, 1:00PM, 2:30PM on each day

Fluid Mechanics

Society for Experimental Mechanics

This exhibit includes a turbulent hydraulic jump in open-channel flow, a shock wave simulation, and hands-on demonstrations of the aerodynamic principles of lift and drag.

Room Number:

Audience: GS, HS, ADULT

Demo Time: continuously

Knot Tying

Society for Experimental Mechanics

Test your knot tying ability in one of our tensile machines!

Room Number:

Audience: GS, HS, ADULT

Demo Time: continuously

Mechanics of the Blues Harmonica

Society for Experimental Mechanics

A survey of some of the mechanics and mathematics that underly all

music, with a focus on the funky personality of the blues harmonica.

Room: Number

Audience: HS, ADULT

Demo Time: continuous

TAM Toys

Society for Experimental Mechanics

A collection of fun hands-on exhibits that demonstrates basic principles of statics and mechanics.

Room Number:

Audience: GS, HS, ADULT

Demo Time: continuous

Transportation Building

Sticky Skyscrapers

Illinois Society of General Engineers

Have you ever wanted to build a skyscraper? Now is your chance! Using only marshmallows and toothpicks, you must attempt build the largest tower. Prizes will be awarded!

Room: 101

Audience: GS,HS,ADULT

Demo Time: Continuously

Genetic Algorithms: Evolution With A Computer

Gamma Epsilon

See the cool things that can be done using Genetic Algorithms, a cutting-edge form of Artificial Intelligence. Try it yourself with simple examples. Watch for a surprise visit from Bart Simpson.

Room: 414

Audience: GS,HS,ADULT

Demo Time: Continuously

Robots Rule!

Gamma Epsilon

Take a peek at a working robotics lab. See what robots can do now, and what they will be doing in the future. See demonstrations and talk to the people behind the technology.

Room: 316

Audience: GS,HS,ADULT

Demo Time: Continuously



Transportation Building

104 S. Mathews, Urbana

Map Code: U

The Transportation Building houses the General Engineering Department.

Real Projects, Real Solutions

Gamma Epsilon

It's the ultimate homework assignment—solve a real company's biggest problem that even they can't figure out! Check out these award-winning Senior Projects by General Engineering students.

Room: 1st Floor

Audience: GS,HS,ADULT

Demo Time: Continuously

Do You Want To Be A Millionaire?

Gamma Epsilon

Want to be the next Bill Gates? Find out how the Technology Entrepreneur Center can help you turn your idea into a successful business.

Room: 1st Floor

Audience: HS,ADULT

Demo Time: Continuously



Beckman Institute

405 N. Mathews, Urbana

Map Code: B

The Beckman Institute for Advanced Science and Technology is the largest academic building on campus and anchors the far end of the north campus.

Your Design Comes To Life

Gamma Epsilon

See an introduction to modeling with real projects in 103. Then head up to 308A to design your own model. See your design come to life before your eyes using a 3-D Printer.

Room: 103

Audience: GS,HS,ADULT

Demo Time: Continuously

Fun With Robotics

Illinois Society of General Engineers

Come witness demonstrations with state of the art robotics and mechanics. Have you ever tried on a pair of robot arms?

Room: 316

Audience: GS,HS,ADULT

Demo Time: Continuously

SPLATfest!

Gamma Epsilon

We will be throwing eggs out of the windows!! Can you save them?! You will be given a variety of materials, and must build a device to keep the egg from breaking. Prizes awarded to the best designs of the day! Don't miss it!

Room: 207

Audience: GS,HS,ADULT

Demo Time: Continuously

Space Age Upside Down Pendulum!

Illinois Society of General Engineers

If you ever wanted to see and play with a truly spectacular gadget now is your chance! Knock the pendulum down and watch the mechanical arm amazingly rebalance the pendulum upside down.

Room: 1st Floor

Audience: GS,HS,ADULT

Demo Time: Continuously

Float Away!

Illinois Society of General Engineers

Ever wonder how many helium balloons it would take you to float away? Stop here to learn about buoyancy and do exciting tricks with helium balloons.

Room: Front Lawn

Audience: GS,HS,ADULT

Demo Time: Continuously

EXCITE BIKES—Bicycle trick demo and the science behind the techniques

Illinois Society of General Engineers

Observe live demonstrations of various bicycle tricks and discover the mechanics behind them. Also learn about the basic operating principles of the bicycle, and how these principles have affected the design of the modern bicycle, in its various forms.

Room: Front Lawn

Audience: GS,HS

Demo Time: Every Hour

Beckman Quad

Production Management—Shed Building

Society for Business Management in Engineering

The Society for Business and Management in Engineering and Habitat for Humanity are holding a joint venture in order to build shed(s) to be later donated to charity. This demonstration will exemplify production management and process planning, important elements in both General and Industrial Engineering.

Room: Beckman Quad

Audience: GS,HS,ADULT

Demo Time: Continuously

Engineering Quad

The Principles of the Turbine Engine

AIAA

Interested in jet propulsion? Do you want to find out what a turbine jet is? Jet engines have had a long history beginning in the 1940s. Stop by and we'll explain about jet engines and fire it up! Be warned: this puts out a lot of noise.

Room: outside Talbot

Audience: GS,HS,ADULT

Demo Time: Every half-hour



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9:00 TO 3:00

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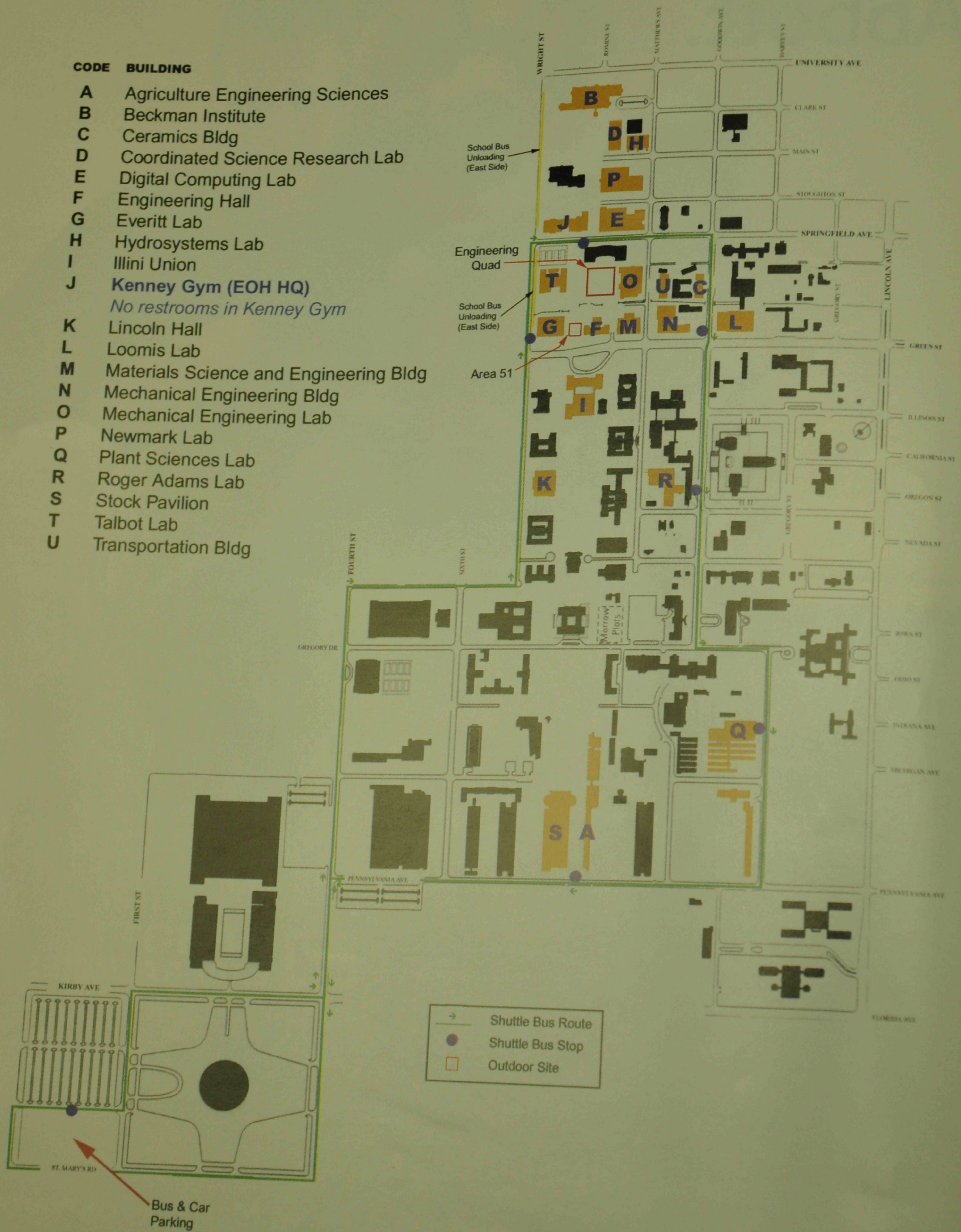
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